



Chapter 9

Organizing & Managing the Technology Education Program

**MISSOURI TECHNOLOGY EDUCATION GUIDE
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Organizing and Managing the Technology Education Program

1. Introduction

Overview

“Even the best laid plans can go astray!” To be sure, but when they do it is most often a problem with organization, management and follow-up. Typically, the TE instructor’s ideas are sound and well-founded—but, if when problems arise, it is his/her action or follow-through that is lacking—and often not due to any personal failing but rather because of a lack of support. Consequently, this chapter’s intent is to help TE instructors organize and manage programs more effectively. As such, this chapter shares the collective experience of the profession’s best practitioners.

To this end, this chapter’s main parts present guidelines to help find and make effective use of key resource people, to use available support systems, to use advisory committees to achieve the TE program’s goals, and to organize and manage the program better. Properly organized and managed, these resources will help students achieve more—and with less strain on your part.

2. Accessing Key Resource Personnel

It is impossible for anyone to be all things to all people. This is especially true in the world of technology with its exponential rate of growth and change. Therefore the TE teacher must be aware of key resource personnel who are available to offer assistance. Typically nine categories of resource people are used most often.

- Local school and school system personnel
 - Supervisors
 - Principals
 - Superintendents
 - Counselors
 - Special ed. Teachers
 - Vocational Resource Person
 - Peer Teachers
- Other local, state and national members of the profession
- University faculty
- Department of Elementary and Secondary Education (DESE) personnel
- Other Missouri state department/division in related areas, e.g., the Department of Health and Human Services, Economic Development and the like
- Educational association/staff members
- State and national special focus groups
- Individuals employed in technology (business & industry)
- Professionals in the community

DESE Personnel

The Missouri Department of Elementary and Secondary Education (DESE), also offers a great deal of assistance. DESE staff has a wide range of contacts with other schools, both within the state and beyond it. Questions most appropriate for the staff to field should be about what to teach, what methods to use, and how well these methods work are as well as questions about what is happening elsewhere.

University Faculty

Similarly, the state colleges and state universities (as listed in Figure 9-1) all provide excellent sources of information. Technology personnel within these institutions have wide experiences with all types of technology and programs. Their faculty have diverse backgrounds, considerable professional involvement and they often conduct research in areas of special interest on a regular basis. They frequently offer seminars, courses, workshops and many types of in-service programs. Figure 9-1 lists the names of colleges and universities in Missouri, along with department titles, addresses and phone numbers. Universities in other states are found in the *Industrial Teacher Education Directory*.

Business & Industry Personnel & Associations

Professional trade associations involved with any facet of any particular technology in question are other logical and important sources for help. These associations are found at local, state and national levels. Don't forget any of them. Much valuable assistance can be gotten from these sources. Figure 9-2 presents a sample of such organizations. TE instructors can identify additional appropriate associations by consulting the *Encyclopedia of Associations* or other association directories in the reference section at their nearest library.

Don't forget business and industry or the local community's professionals either. Frequently equipment, supplies and other materials are available just for the asking. Business and industry like to help education because the schools supply them with skilled manpower. Some of these contacts are, or should be, members of your advisory committee. Use these contacts regularly on both a formal and an informal basis. Show up at their places of business, just to be friendly, from time to time. Don't just show up or phone only when you want something. Offer your services when it is feasible for you to be of assistance to them and their firms. This type of partnership is one of sharing and cooperation and should be one of mutual benefit.

Figure 9-1
Missouri Universities with TE Programs ¹

Central Missouri State University
Warrensburg, MO 64093

Dept. of Graphics
Phone (660)543-4727

Dept. of Industrial Technology
Phone (660)543-4439

Dept. of Career & Technology Education
Phone (660)543-4452

Dept. of Safety Science and Technology
Phone (660)543-4626

Southeast Missouri State University
Cape Girardeau, MO 63701

Dept of Industrial & Engineering
Technology
Phone (573)651-2104

The College of the Ozarks
Point Lookout, MO 65726
Department of Technology
Phone (417)334-6411

Lincoln University
Jefferson City, MO 65101
Dept. of Computer Science & Technology
Phone (573)681-5482

Figure 9-2
Selected Trade Associations Relevant to TE ²

• American Foundrymen's Society www.afsinc.org/	• Society of Manufacturing Engineers www.sme.org/cgi-bin/getsmepage.pl?new-sme.html&&&SME&
• National Computer Graphics Association XXX	• Screen Printing & Graphic Imaging Association International www.sgia.org/
• Graphic Arts Technical Foundation www.gain.net	• American Petroleum Institute www.api-ec.api.org/newsplashpage/index.cfm
• American Society for Testing and Materials www.astm.org/cgi-bin/softcart.exe/index.shtml?E+mystore	• The Associated General Contractors www.acg.org/
• Electronics Industry Association www.eiaa.asn.au/home.html	• National Safety Council www.nsc.org/
• National Paint & Coatings Association www.paint.org/index.htm	• American Society for Metals www.asm-intl.org/
• Society of Plastic Engineers www.4spe.org/	• American Welding Society www.aws.org/
• National Association of Manufacturers www.nam.org/	• National Association of Home Builders www.nahb.org/
• Western Woods Products Association www.wwpa.org/	• National Paint and Coatings Association www.paint.org/

¹ From Industrial Teacher Education Director

² Addresses and descriptions are available in the *Encyclopedia of Associations*.

Government & Education Association Personnel

State and Federal government agencies in specific service areas can be of immeasurable assistance with problems in their area of expertise. Typically, the types of things that will be involved will not necessarily be technological in nature although, they may involve technology, industrial, medical or some other kind. After all, technology pervades virtually every aspect of human endeavor. Some of the government agencies that can provide assistance are presented in Figure 9-3.

Educational associations on the local, state and national level can be of assistance in many ways. They offer publications, conferences and special-topic workshops and seminars. Membership in this type of association is highly recommended and it can pay off in dividends for students, faculty and the entire school district. Figure 9-4 lists some of the associations of relevance to TE.

Figure 9-3
Useful Federal and State Agencies

<u>Federal</u>	
<ul style="list-style-type: none"> • The U.S. Department of Education 400 Maryland Ave, SW Washington, DC 20202 Phone: (800) USA-LEARN 	<ul style="list-style-type: none"> • Center on Education and Training for Employment The Ohio State University 1900 Kenny Rd. Columbus, OH 43210-1090, (800) 848-4815
<ul style="list-style-type: none"> • National Center for Research in Vocational Education (NCRVE) 2030 Addison St., Suite 500 Berkeley, CA 94720-1674 Phone: (510) 642-4004 	<ul style="list-style-type: none"> • Environmental Protection Agency • Farmers Home Administration • Nuclear Regulatory Commission • The Dept. of Health and Human Services • National Aeronautics & Space Administration • Department of Transportation
<u>State</u>	
<ul style="list-style-type: none"> • Career and Technical Education Resources 2 London Hall University of Missouri-Columbia Columbia, MO 65211 Phone: (573) 882-6605 or (800) 392-7217 	<ul style="list-style-type: none"> • Missouri Council on Vocational Education
<ul style="list-style-type: none"> • Missouri Occupational Information Coordinating Committee 421 East Dunklin Jefferson City, MO 65101 Phone: (573) 751-3800 	<ul style="list-style-type: none"> • Missouri State Agency for Surplus Property 117 N. Riverside Dr. P.O. Drawer 1310 Jefferson City, MO 65102 Phone: (573) 751-3415
<ul style="list-style-type: none"> • Missouri LINC 	<ul style="list-style-type: none"> • Division of Vocational Rehabilitation • Division of Employment Security • Division of Family Services • Governor's Committee on the Employment of the Handicapped • Job Development and Training Program • Department of Health • Departs. of Labor and Industrial Relations • Wolfner Memorial Library (for the blind and physically handicapped)

The main two TE associations are the (Association for Career & Technical Education's (ACTE) Technology Education Division and the International Technology Education Association (ITEA)). Both offer extensive benefits and programs of service to their members. In fact, many in the profession belong and actively participate in both. The Technology Education Association of Missouri (TEAM) serves as the state's representative for both national associations. The Missouri Association of Career & Technical Education, the state's ACTE affiliate, has a Technology Education Division which provides programming and an interface to the vocational education system.

The International Technology Education Association (ITEA) and the ACTE's Technology Education Divisions are the profession's voice for technology education. Their purpose is to enhance service to youth. Their primary concerns involve the evolution of curriculum and personnel in the profession. Their programs for teachers, students and supervisors are based on the premise that technology education is vitally significant in a world where industry and technology are critical to every aspect of our life. Both state and national associations work to secure federal funding for technology education programs and both have received recognition from the U.S. Department of Education.

The Technology Education Association of Missouri deserves special mention because it is our state's key professional association. Essentially the work of this association is conducted by an elected board of directors and by committees they appoint. The former is representative of the state's eleven regional TE associations. Some of the TEAM's main activities include:

- Issuing a regular newsletter/magazine.
- Conducting the annual regional and state Technology Education Awards Program and Exposition for student skill and knowledge.
- Organizing professional development conferences several times each year (including the TE program at the MoACTE's July conference.)

State and national special focus groups are associations of individuals with concern for specific groups of individuals. Among these groups are the handicapped, disadvantaged, blind, autistic and minority groups.

Figure 9-4
Professional Associations Relevant to TE

International Technology Education Association (ITEA)* 1914 Association Drive Reston, VA 20191-1539 Phone: (703) 860-2100	Epsilon Pi Tau Bowling Green State University 101 Technology Bowling Green, OH 43403 Phone: (419) 372-2425
Council on Technology Teacher Education Council for Supervisors Council of Technology Education Associations Technology Education for Children Council	Missouri National Education Association (MNEA) 1810 E. Elm St. Jefferson City, MO 65101-4174 Phone: (573) 634-3202
Technology Student Association (TSA) 1914 Association Drive Reston, VA 20191-1540 Phone: (703) 860-9000	Missouri Congress of Parents and Teachers (PTA) 2101 Burlington St. Columbia, MO 65202-1997 Phone: (573) 474-8631
Association of Career & Technical Education (ACTE) Technology Education Division* 1410 King St. Alexandria, VA 22314 Phone: (800) 826-9972	Missouri ACTE 213 E. Capitol Ave. P.O. Box 1955 Jefferson City, MO 65102 Phone: (573) 634-7366
Technology Education Collegiate Association 1914 Association Drive Reston, VA 20191-1539 Phone: (703) 860-2100	Technology Education Association of Missouri (TEAM)* and its regional associations*
Missouri Federation of Teachers (MFT) 208 Madison St. Jefferson City, MO 65101 Phone: (573) 635-0073	* Contact Missouri State Technology Education Supervisor for current president, address and phone.
Missouri State Teachers Association (MSTA) 407 South Sixth St. P.O. Box 458 Columbia, MO 65202 Phone: (573) 442-3127; (800) 392-0532	Missouri Department of Elementary and Secondary Education (Mo DESE) P.O. Box 480 Jefferson City, MO 65102 Phone: (573) 751-7764

School Administration

Perhaps no personnel are as pivotal to the success of the TE program as are the members of the school's administrative team. Here is where degrees of freedom are enlarged or restricted. Instructors must be certain to work carefully and systematically to build administrative support. The extent and nature of such support, as well as the challenge facing TE instructors can be determined in Figure 9-5.

Figure 9-5
MOTE Standards, Topic 5: Administration & Supervision Standards

Technology education requires leadership from individuals who comprehend the philosophy and who demonstrate support by helping faculty and support groups to achieve stated goals and objectives. Like the faculty, the supervisor must also continue to grow professionally so that leadership represents the latest thinking in the profession. The statements contained within this standard topic concern the administration and supervision of a technology education program. Administrators and supervisors provide management of and direction for the program. These personnel perform leadership functions that ensure attainment of all program goals.

Fill in marks to indicate assessment: 0 not met, 0 met, 0 exceeded			
1. A minimum of one full-time local technology education supervisor is provided for 25 or more TE teachers, or for districts with less than 25 TE teachers, appropriate proportional supervision is provided.	0	0	0
2. Local supervisors are qualified TE teachers, have taught TE for a minimum of three years, and hold an appropriate master's degree	0	0	0
3. Local supervisors conduct a minimum of one TE in-service program yearly.	0	0	0
4. A job description that includes the qualifications, duties, and responsibilities of each local TE supervisor is available.	0	0	0
5. In addition to local supervision, departmental leadership or management is provided.	0	0	0
6. A maximum of 20 students are enrolled per teacher, per period of laboratory activity.	0	0	0
7. A minimum of one non-teaching period for preparation is provided each day	0	0	0
8. Time is provided to enable the technology teacher to organize and advise a local TSA chapter or local program student club.	0	0	0
9. Teacher aides or paraprofessionals are provided in classes where enrollment of students with special needs necessitates their assistance.	0	0	0
10. Supervisors and teachers utilize predetermined standards to plan and organize the TE program.	0	0	0
11. Supervisors and teachers utilize predetermined standards to develop short-and-long range program plans.	0	0	0
12. Provisions are made for teachers to review, develop, and adapt curriculum and instructional materials that are compatible with local and state TE guidelines.	0	0	0
13. Supervisors and teachers cooperatively develop specifications for TE equipment and resource materials.	0	0	0
14. Supervisors involve teachers in developing specifications for TE facility design, development, and renovation.	0	0	0
15. Funds are made available for travel, release time, and substitutes for personnel to participate in in-service professional activities.	0	0	0

16. Funds are made available for travel, release time, and substitutes for personnel to participate in local, state, and national TSA or local program student club activities.	0	0	0
17. Written administrative policies and directives, specifically addressing the operation of the technology education program, are available	0	0	0
18. Teachers are visited on a regularly scheduled basis by supervisory personnel	0	0	0
19. Any reports required by local, state, and federal agencies are prepared and submitted on schedule.	0	0	0
20. Accurate financial reports are prepared and submitted on schedule, as required.	0	0	0
21. Safety reports are prepared and submitted on schedule, as required.	0	0	0
22. A biographic, academic, and medical profile is maintained of each student enrolled in TE.	0	0	0
23. Demographic data about all technology students is available by grade level and by course, including but not limited to course enrollments by racial and ethnic categories, by sex, and by type and number of students with special needs	0	0	0
24. Records and related information on equipment, tools, textbooks, and supplies are prepared and made available to appropriate personnel.	0	0	0
25. Effective, open communication pertaining to all elements in the instructional program is established and utilized consistently among TE faculty, school staff and administrators, school board members, supervisors, advisory committees.	0	0	0
26. Effective, open communication pertaining to all elements in the instructional program is established and utilized consistently among TE faculty, and students and parents.	0	0	0

Number of the topic's standards that were not met (0), met (0), and exceeded (0): ____
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3. Using Available Support Systems

Available support systems are closely related to the previous topic that highlighted resource people. Key resource personnel are a vital component of any support system. There are, however, some support systems that are not necessarily represented by individuals. Some of these include: state department of education programs, federal programs and physical plant services.

Missouri Department of Elementary and Secondary Education

The Missouri Department of Elementary and Secondary Education offers, on an annual basis, the Technology Education Grant Awards Program. Guidelines are issued yearly to help TE instructors apply for these funds. Typically they are earmarked for the improvement of instruction in Technology Education programs. In the past, such funds have been available for exemplary programs, innovative teaching methods, equipment, supplies, copying and dissemination of successful practices. It is strongly recommended that TE instructors take advantage of this funding to supplement local resources. This

enables a more rapid implementation of program change/ updating in order to better reflect rapidly changing technologies.

Guidance Support

One of the support systems crucial to the success of TE programs is the school's guidance support. For maximum program effectiveness, formal and cooperative relationships are vitally important.

4. Using Advisory Committees

Advisory committees at the state and local level should help educators determine the nature, content and activities of each course. In addition, they can provide valuable input regarding the facilities required to implement the program. Local committees are helpful in determining community needs and in identifying the human and material resources available from within the community and local industry.

Although it is important to note that such committees are not policy or decision making groups, their services are valuable and should be given every consideration. But finally, it is the responsibility of the TE instructor and the school's administration to decide whether (and how) the recommendations are to be implemented.

Local advisory committees may be the single most important source of information and assistance available to the TE teacher. Considerable assistance can be obtained from these committees. However, in interaction with state and national advisory committees an even broader perspective on programming, industrial needs and available resources is available.

One overall advisory committee should be established for the TE program. If the school has a vocational or community advisory committee/group/organization, then it is important that a representative from the TE advisory committee serve on the other advisory group for liaison and coordination purposes. Similarly one TE advisory council member should be designated to establish a correspondence link with the national Technology Education Advisory Council. Such correspondence should be directed through the ITEA national office. Another member should keep in touch with Missouri's Council on Vocational Education.

National Technology Education Advisory Council

At the National Level, the Technology Education Advisory Council (TEAC) was established to provide information to the technology education profession about current developments and possible trends in technology education. As such, the TEAC services to:

- Recommend ways of resolving discrepancies between the programs and philosophies of technology education and current industrial/technological practices.
- Recommend content directions to improve the relevance of technology education.
- Suggest methods of improving the public's perception and understanding of technology education.
- Facilitate the cooperation between industry and education to improve the education of youth.

The TEAC's recommendations are advisory since the council has no official policy-making authority. The council's topics of discussion vary as the association's membership suggests or as requested by the ITEA's Board of Directors – the TEAC's sponsoring group.

Local TE Advisory Committees¹

The duties of local technology education advisory committees are to counsel and advise TE instructors, supervisors, school administrators and the school board concerning the directions, management and supervision of the TE program. Generally these committees also assist in the development and maintenance of the TE curriculum and facility. An excellent guide (Behymer) to the use of advisory committees is available from UMC's Instructional Materials Laboratory, "A Facilitator's Guide: Partnerships & Advisory Groups," #30-54921.

Local advisory committees provide community and industrial input to teachers and counselors. They are not policy or decision-making groups, rather they advise by reviewing policies and programs, by expressing opinions on programs, services, facilities and learning activities and by identifying trends, priorities and resources. It is recommended that such committees be asked to submit an annual report as well as such special reports as appropriate. It is also important that the advisory committee addresses the TE program's relationship to the overall school curriculum. Other recommended advisory committee activities include:

- Making recommendations regarding program content and needed curriculum, equipment and facility changes.
- Providing information and technical assistance necessary to update the program.
- Assisting in developing performance objectives
- Assisting in developing and conducting community surveys.
- Providing with information regarding new career opportunities.
- Assisting in obtaining community resources.
- Assisting in the development and promotion of good public relations.
- Assisting in the evaluation and review of the program (Towler, p. 75).

Local TE Advisory Committee Membership

There is no answer to the optimum size of an advisory committee. Each committee should be comprised of member representatives of the community it serves. Normally however, about seven members (less in small communities) will provide adequate coverage of geography, minorities and industries within a given community. The following should provide helpful guidelines for selecting committee members.

Industry representatives, e.g.:

- One individual from the communications industry.
- One from energy/power.
- One from materials processing industry.
- One TE educator
- One or more parents (can be identified by the local PTO)
- One or more students (at least one should be female)
- One representative from the school or system's administration
- One individual representing vocational education
- One specialist in the area of special needs populations

Some method of membership rotation should be devised prior to the actual formation of a committee. Fresh viewpoints and ideas are essential to properly address our rapidly changing technological world. For this reason, only under exceptional circumstances should the reappointment of a committee member be considered. One workable way to address the rotation of committee members is to make their initial terms of varying length – typically one, two and three years are used.

Advisory committees could of course use consultants, on a temporary basis, to assist in solving specific problems. Specialists in areas outside of the committee's areas of expertise can serve on a temporary basis until a specific problem or concern is adequately addressed. If this arrangement is used the consultants would not have voting privileges in committee matters. Their services would be on a strictly consulting basis.

Local TE Advisory Committee Operations

Selection of Officers

Each advisory committee should elect a chair and a secretary. It is recommended that a teacher or administrator not serve as chair, but may serve as secretary.

Officer Duties

The chair:

- Shall call and preside at all committee meetings.
- Shall schedule all meetings and make necessary committee assignments.
- Should prepare an agenda for each meeting.

The secretary:

- Will record, maintain and distribute minutes of every meeting to each member of the committee.

- Is responsible for notifying members of the meeting date, time and place.
- Should provide all members with an agenda and issues to come before the committee prior to the meeting, preferably one week in advance.

Meetings

It is recommended that:

- The initial meeting be held within thirty days following appointment of the committee. The superintendent, or a representative, should call this meeting and preside until a chair is selected.
- The committee members be acquainted with the purpose and duties of the committee.
- Committee meetings be planned for specific purposes. Behymer's guide provides an excellent outline for a program to work.
- Regular scheduling of meetings be determined by membership, based on existing problems and important matters for consideration.
- The committee should establish its own governance rules.

The School's Responsibility to Committee Members

Committee members should be informed, by an official letter from the superintendent of schools, that membership is an official act which has state approval. The committee and school administrators should work in harmony to serve a definite purpose. Committee members must be advised that they are resource persons to improve curricula, facilities, teacher preparation, occupational information, community surveys and public relations. (Towler, p. 76)